Refraction

Why waves bend, and Snell's law.

Physics

The ratio of the sines of the angles equals the inverse ratio of the speeds.

$$n_1 \sin \theta_1 = n_2 \sin \theta_2 \cdot n = c/v$$

Into a denser medium Slows down.	**Bends toward the normal**
Into a less dense medium	**Bends away from the normal**
Along the normal Speed still changes.	**No bending**

THE COMMON MISTAKE

× Saying the wave slows because it bends

✓ It bends because it slows

The speed change is the cause. Entering along the normal changes speed with no direction change at all.

Refractive index n = c/v, always greater than 1 in a material. Frequency never changes at a boundary.